REMARKS

Claims 1-4 and 6-21 remain pending in the application. Claims 1-4, 6-9, 11, 12, 14 and 19-21 have been amended, and claim 5 has been cancelled. Reconsideration of the rejection and allowance of the pending application in view of the following remarks are respectfully requested.

As an initial matter, Applicants wish to thank the Examiner for indicating that claims 3, 12, 13 and 16-18 include allowable subject matter.

Applicants also thank the Examiner for acknowledging Applicants' claim for foreign priority and receipt of the certified copy of the priority document, and for considering all of the documents cited in the Information Disclosure Statements filed on July 8, 2004 and June 7, 2005.

In the Office Action, the Examiner objected to the title of the application, asserting that it is not descriptive. Applicants herewith amend the title to read as --- METHOD AND APPARATUS FOR CONTROLLING LASER POWER USING A TEST LIGHT EMISSION PATTERN HAVING A MULTIPULSE LIGHT EMISSION INTERVAL ---. Applicants respectfully submit that the amended title is sufficiently descriptive, and thus, respectfully request that the Examiner withdraw the objection.

In the Office Action, the Examiner objected to the drawings, asserting that Figure 11 should be designated by a legend such as --- Prior Art ---. Applicants have amended Figure 11 by adding a --- Prior Art --- label, and thus, respectfully request that the Examiner withdraw the objection.

The Examiner also objected to the drawings on the ground that they did not show all the limitations of claims 5-13 and 16-18. Applicants herewith amend Figs. 7A, 7B

and 8 to add labels "Tmp", "Twbl", "Tb", "Tapcarea", "Te", "T0" and "Ith". Support for these labels may be found in the specification, and thus, no prohibited new matter has been added. Applicants respectfully submit that Applicants' amended drawings show all of the limitations of claims 5-13 and 16-18, and thus, respectfully request that the Examiner withdraw the objection.

In the Office Action, the Examiner rejected claims 1, 2, 10, 11, 19 and 20 under 35 U.S.C. §102(b) as being anticipated by either Japanese Patent No. 2002-203320 to Koishi et al. (the '320 patent) or U.S. Patent Application Publication No. 2002/0070329 to Koishi et al. (the '329 publication); rejected claims 1, 2, 10, 11, 19 and 20 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,728,178 (the '178 patent), which issued from the underlying application of the '329 publication (i.e., U.S. Patent Application No. 09/983,402); and rejected claims 5-9 under 35 U.S.C. §103(a) as being unpatentable over either the '320 patent or the '329 publication in view of Nakajo (U.S. Patent No. 6,781,937). Applicants respectfully traverse the rejections for at least the following reasons.

Applicants' independent claim 1 recites a method for controlling a laser power used to record a recording mark on a laser controlling region of an optical disk which includes, inter alia, causing a laser to emit a test light emission pattern including a multipulse light emission interval. A time width Tmp of the multipulse light emission light interval is longer than a time width of a recording mark included in a frame sync. The time width of the recording mark included in the frame sync is longer than a time width Tmax of the longest recording mark of data in a recording region of the optical disk.

Applicants' independent claim 19 recites an apparatus for controlling a laser power used to record a recording mark on a laser controlling region of an optical disk which includes, inter alia, a formatter having a test light emission pattern including a multipulse light emission interval. A time width Tmp of the multipulse light emission light interval is longer than a time width of a recording mark included in a frame sync. The time width of the recording mark included in the frame sync is longer than a time width Tmax of the longest recording mark of data in a recording region of the optical disk.

The '329 publication, the '178 patent and the '320 patent disclose a semiconductor laser control method for writing to an optical disc in which peak current operation data is converted to an analog current value. The analog signal is input to a peak level switch 46, and switched to a pulse current according to a peak modulation signal 49. See, e.g., Figures 2 and 3 and paragraph [0103] of '329 publication, and Figure 3 and paragraph [0078] of the English-language translation of the '320 patent.

In the Office Action, the Examiner asserts that the peak modulation signal 49 of the '329 publication, the '178 patent and the '320 patent reads on the multipulse light emission interval recited in Applicants' independent claim 1. In addressing claim 5 at page 8 of the Office Action, the Examiner acknowledges that the time duration of the peak modulation signal 49 is not greater than a time duration of a longest recording mark of data in a recording region of the optical disc. However, the Examiner asserts that, in view of Nakajo, it would have been obvious to vary the duration of the peak modulation signal 49 to have a better impact on jitter.

Nakajo discloses various methods of controlling an irradiation time of a laser light, which are described with reference to Figs. 10-14. Applicants respectfully submit

that Nakajo fails to disclose or even suggest that a time width of a multipulse light emission interval is controlled to be longer than a time width of a recording mark included in a frame sync, where the time width of the recording mark included in the frame sync is longer than a time width of the longest recording mark of data in a recording region of an optical disc, as recited in Applicants' independent claims 1 and 19. Rather, Applicants respectfully submit that Nakajo's irradiation time is controlled merely to control the length of a recording mark.

In contrast, by setting the time width of the multipulse light emission interval to be longer than a time width of a recording mark included in a frame sync, as recited in Applicants' claims 1 and 19, the precision of detection of the average value of the multipulse can be improved, the average value can be settled, and remaining ripples can be minimized, as disclosed, for example, on page 23, lines 15-17 of Applicants' specification. Furthermore, error detection of the frame sync can be avoided, as disclosed, for example, at page 24, lines 3-7 of Applicants' specification.

Thus, Applicants respectfully submit that the '329 publication, the '178 patent, the '320 patent and Nakajo each fail to disclose or suggest, either individually or in the combination set forth by the Examiner, a method for controlling a laser power which includes causing a laser to emit a test light emission pattern including a multipulse light emission interval, where a time width Tmp of the multipulse light emission light interval is longer than a time width of a recording mark included in a frame sync, and the time width of the recording mark included in the frame sync is longer than a time width Tmax of the longest recording mark of data in a recording region of an optical disk, as recited in Applicants' independent claim 1.

Applicants further submit that that the '329 publication, the '178 patent, the '320 patent and Nakajo each fail to disclose or suggest, either individually or in combination, an apparatus for controlling a laser power which includes a formatter having a test light emission pattern including a multipulse light emission interval, where a time width Tmp of the multipulse light emission light interval is longer than a time width of a recording mark included in a frame sync, and the time width of the recording mark included in the frame sync is longer than a time width Tmax of the longest recording mark of data in a recording region of an optical disk, as recited in Applicants' independent claim 19.

For at least these reasons, Applicants respectfully submit that the rejection of independent claims 1 and 19 is improper, and thus, respectfully request that the Examiner withdraw the rejections.

Applicants submit that claims 2-4, 6-18, 20 and 21 are in condition for allowance at least in view of their dependency from claims 1 and 19.

Claim 5 has been cancelled, as its subject matter has been substantially incorporated into claims 1 and 19.

In the Office Action, the Examiner objected to claims 3, 12, 13 and 16-18 as being dependent upon a rejected base claim, but indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants once again thank the Examiner for indicating that these claims include allowable subject matter. Applicants respectfully submit that these claims are currently in condition for allowance, at least in view of their dependency from claims 1 and 19, and thus, have not amended these claims to place them in independent form at this time. However, Applicants respectfully reserve the right to do so at a later time, based on original claims 1 and 19.

Based on the above, it is respectfully submitted that this application is now in condition for allowance, and a Notice of Allowance is respectfully requested.

SUMMARY AND CONCLUSION

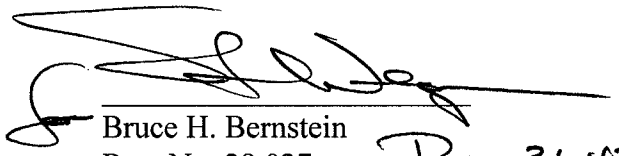
Entry and consideration of the present amendment, reconsideration of the outstanding Office Action, and allowance of the present application and all of the claims therein are respectfully requested and believed to be appropriate. Applicants have made a sincere effort to place the present invention in condition for allowance and believe that they have done so.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Hisashi SENGA et al.



Bruce H. Bernstein
Reg. No. 29,027

Reg. 31,438
STEVEN WEGMAN

June 18, 2007
GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191

Attachments: Replacement drawing sheets for Figures 7A-7F, 8 and 11 (3 sheets)